

WHAT IS CLAIMED IS:

1. A method for determining network traffic flowing between a first region and a second region, said method comprises the steps of:

identifying one or more routers in the first region;

5 identifying one or more routers in the second region;
identifying links that connect the identified one or more routers in the first region to the identified one or more routers in the second region;

determining, at a processor remote from the one or more routers in the first and second regions, used bandwidth of the identified links over a period of time; and

10 determining the network traffic flowing between the first and second regions based on the determined used bandwidth.

2. The method of claim 1, wherein the step of identifying one or more routers in the first region comprises the step of determining a longitude and a latitude of the one or 15 more routers in the first region.

3. The method of claim 2, wherein the step of identifying one or more routers in the second region comprises the step of determining a longitude and a latitude of the one or more routers in the second region.

20 4. The method of claim 3, wherein the step of identifying the links comprises the steps of:

retrieving information about topology of the one or more routers in the first and second regions;

25 selecting the one or more routers in the first region whose determined longitude and latitude are in predetermined areas of the first region;

selecting the one or more routers in the second region whose determined longitude and latitude are in predetermined areas of the second region; and

30 comparing the latitude and longitude of the selected one or more routers in the first and second regions with the retrieved topology information to identify links that

connect the selected one or more routers in the first region to the selected one or more routers in the second region.

5. The method of claim 1, wherein the step of determining the used bandwidth
5 comprises the step of:
determining a plurality of used bandwidth samples of the identified links
over the period of time.

6. The method of claim 1, wherein the step of determining the network traffic
10 comprises the steps of:
determining an average of a plurality of samples of the used bandwidth
remotely determined by the processor; and
multiplying the determined average by the period of time to determine the
network traffic flowing between the first and second regions.

15 7. The method of claim 1, wherein the step of determining the network traffic
comprises the steps of:
estimating a total number of links connecting routers in the first region to
routers in the second region; and
20 multiplying the estimated total number of links by the determined used
bandwidth to determine the network traffic flowing between the first and second regions.

8. A method for determining network traffic within a region, said method
comprises the steps of:
25 identifying a sample of hosts in the region, each sample host including one
or more servers;
identifying, at a processor remote from the sample hosts, last pairs of
identifiable routers on respective routes from the processor to the sample hosts;
identifying respective links connecting the identified last pairs of routers;
30 determining used bandwidth of the identified respective links; and

determining the network traffic within the region based on the determined used bandwidth.

9. The method of claim 8, wherein the step of identifying the last pairs of 5 identifiable routers comprises the steps of:

invoking a traceroute program at the processor to identify routers on respective routes to the sample hosts; and

selecting pairs of the identified routers on the respective routes such that each selected pair has a shortest hop to a respective one of the sample hosts.

10

10. The method of claim 8, wherein the step of determining the used bandwidth comprises the step of:

invoking a getbandwidth program at the processor to determine a plurality of used bandwidth samples for each of the identified respective links.

15

11. The method of claim 8, wherein the step of determining the network traffic comprises the steps of:

determining an average used bandwidth of the identified respective links based on a plurality of samples of the used bandwidth remotely determined by the

20 processor over a period of time; and

determining the network traffic within the region based on the determined average used bandwidth.

12. The method of claim 8, wherein the step of determining the network traffic 25 comprises the steps of:

determining a traffic model for the identified respective links based on the determined used bandwidth; and

determining the network traffic within a region based on the determined traffic model.

30

13. The method of claim 8, wherein the step of determining the network traffic comprises the steps of:

- estimating a total number of hosts in the region; and
- multiplying the estimated total number of the hosts by the determined used bandwidth to determine the network traffic within the region.

14. A system, comprising:

- at least one memory including
- code that identifies one or more routers located in a first region and

10 a second region of a network, identifies links that connect the identified one or more routers in the first region to the identified one or more routers in the second region, remotely determines used bandwidth of the identified links over a period of time, and determines the network traffic flowing between the first and second regions based on the determined used bandwidth; and

15 at least one processor that executes the code.

15. A system, comprising:

- at least one memory including
- code that identifies a sample of hosts located in a region of a

20 network, remotely identifies last pairs of identifiable routers on respective routes from the processor to the sample hosts, identifies respective links connecting the identified last pairs of routers, determines used bandwidth of the identified respective links, and determines the network traffic within the region based on the determined used bandwidth.

at least one processor that executes the code.